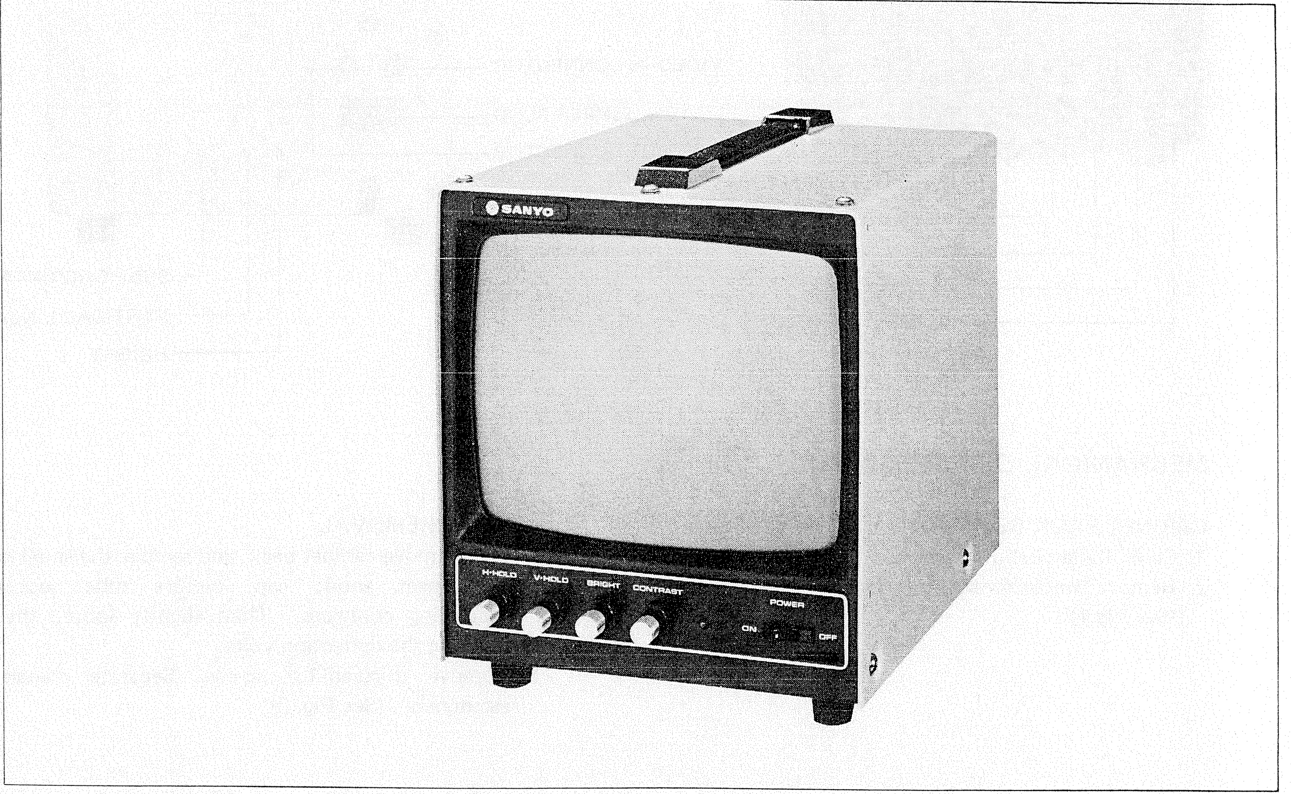
SERVICE MANUAL

SANYO

VIDEO MONITOR

VM4209

(EUROPE)

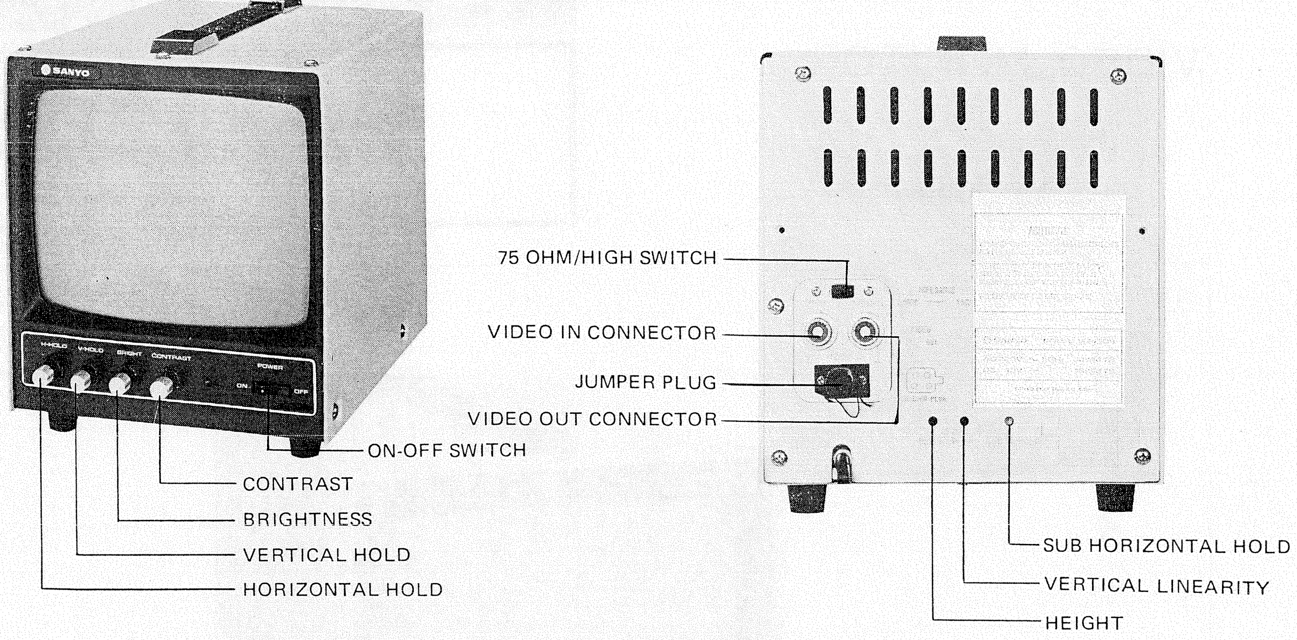


SPECIFICATIONS

Scanning system	625 lines, 25 frames per sec.
Power source	AC 220 V 50 Hz
Power consumption	AC 32 W, DC 15 W
Picture tube	10-inch diagonal, 90° deflection 240XB4A or 240YB4
Semiconductors	Transistor 19
	Diode 17
Horizontal resolution	more than 600 lines
Cabinet dimension	220mm (W) x 255mm (H) x 285mm (D) approx.
Net weight	6.5 kg approx.
Video	
input signal level	1.0 Vp-p
input impedance	High - 75 ohm switchable
output signal level	0.5 - 1.5 Vp-p
output impedance	over 10k ohm

NOTE: Specifications are subject to change without notice.

CONTROLS AND TERMINAL IDENTIFICATION


SANYO
H-HOLD
V-HOLD
BRIGHT
CONTRAST
POWER
ON
OFF
75 OHM/HIGH SWITCH
VIDEO IN CONNECTOR
JUMPER PLUG
VIDEO OUT CONNECTOR
ON-OFF SWITCH
CONTRAST
BRIGHTNESS
VERTICAL HOLD
HORIZONTAL HOLD
SUB HORIZONTAL HOLD
VERTICAL LINEARITY
HEIGHT

MECHANICAL DISASSEMBLIES

CABINET BACK REMOVAL

1. Carefully lay cabinet face down on soft mat.
2. Remove five(5) screws securing the cabinet back. (See Fig.1.)

CHASSIS REMOVAL

1. First remove cabinet back, and remove the small knobs.
2. Disconnect anode cap, picture tube socket and grounding connector. Then slightly loosen the screw securing the deflection yoke.
3. Remove thirteen(13) screws. Separate chassis from escutcheon. (See Fig. 2.)

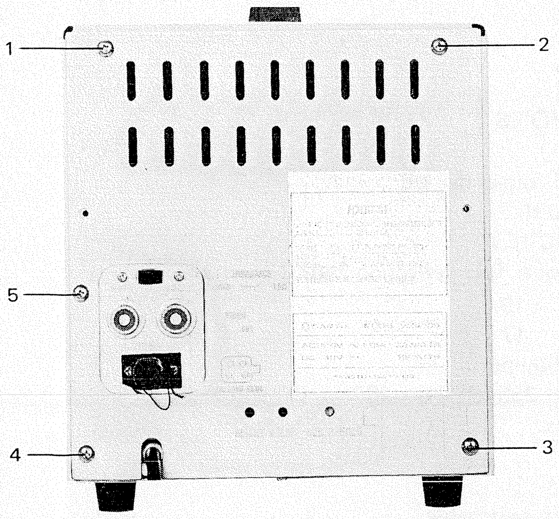


Fig. 1

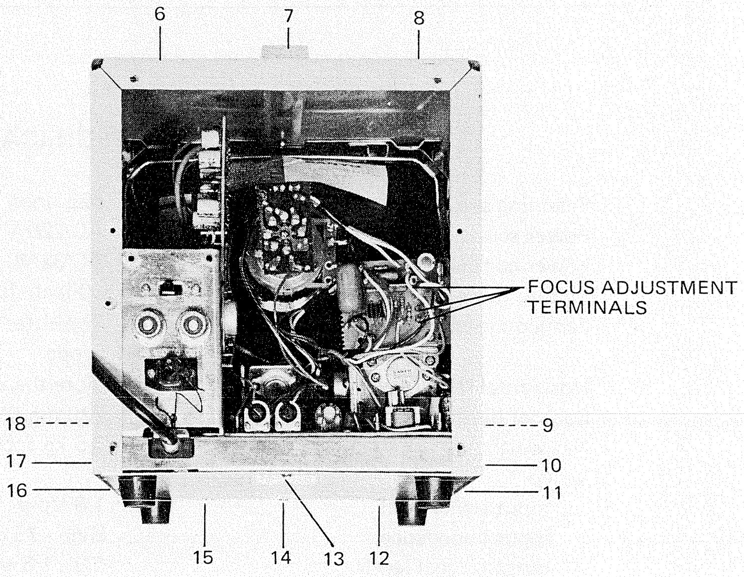

6
7
8
FOCUS ADJUSTMENT TERMINALS
18
17
16
9
10
11
15
14
13
12

Fig. 2

IMPORTANT NOTICE FOR SERVICE PERSONNEL BEFORE SERVICING

PLEASE READ BEFORE ATTEMPTING SERVICE

1. Line voltage must be kept within ± 10% of the rated voltage.
2. When operating at line voltage, confirm the DC voltage at P17 is 11.5 ± 0.1 V. (Adjust R807)
3. Keep line voltage when adjusting Horizontal Oscillator or Deflection circuit.
4. When adjusting Horizontal Oscillator Frequency, do not vary this frequency more than ± 800 Hz from 15,625 Hz center frequency (800 Hz equals 16 bars)
5. DO NOT DISCHARGE, ARC, OR MEASURE HIGH VOLTAGE WHEN HIGH VOLTAGE LEAD IS CONNECTED TO CRT. DISCHARGE 2ND ANODE OF CRT ONLY AFTER HIGH VOLTAGE LEAD HAS BEEN DISCONNECTED. DO NOT DISCHARGE HIGH VOLTAGE LEAD AT ANY TIME, DAMAGE TO TRANSISTORS MAY RESULT.
6. While the receiver is in operation, do not attempt to connect or disconnect any wires.
7. Disconnect all power before attempting any repairs.
8. When the power is on, do not attempt to short any portion of the circuit. This shorting may cause damage to the transistors in the receiver.

ADJUSTMENT

PICTURE FOCUS

Connect the white lead from P009 to one of the three terminals (F1, F2 and F3) for providing the best focus. (See Fig. 2.)

PICTURE WIDTH

1. If picture is too wide, cut the link J4. This connection may have been opened in some chassis as a result of factory adjustment.
2. If picture is still too wide, cut the link J5. (See Fig. 3.)

DEFLECTION YOKE AND CENTERING RINGS

1. Loosen the Deflection Yoke clamp and carefully move the yoke on the neck of the picture tube as far foward as possible. Rotate the yoke until the top and bottom edges of the raster are straight. Tighten the clamp.
2. Center the raster and eliminate shaded corners by rotating the centering rings until the best effect is obtained.

VERTICAL HEIGHT AND LINEARITY

PRELIMINARY

1. Adjust AC power to the rated voltage with a voltage regulator.
2. Set V-Hold (R803), Height (R805) and V-Linearity (R806) controls to the mid-position.
3. Turn the switch "ON" and leave the receiver for about 5 minutes before proceeding the following adjustments.

ADJUSTMENT PROCEDURE

1. Adjust the V-Linearity control to obtain the best linearity.
2. Adjust the Height control to obtain proper picture height.
3. Measure the voltage at K4 to chassis. If it is less than 5.1 V DC, cut off R518.

SUB-BRIGHTNESS

1. Set Brightness (R802) and Contrast (R801) controls to maximum.
2. Adjust Sub-Brightness control (VR001) to sufficient brightness not exceeding the limit of dim lines produced.

PARTS LOCATION

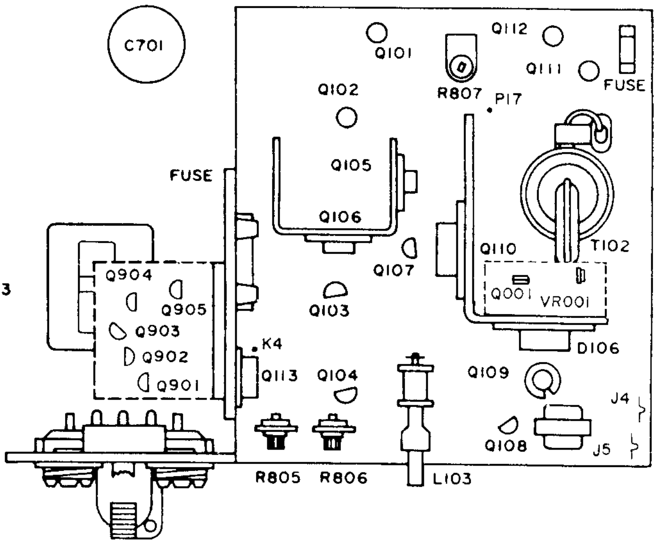
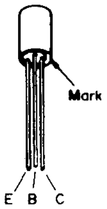
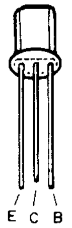
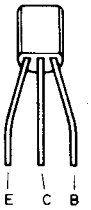
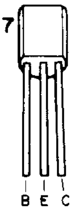
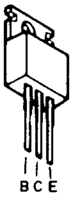
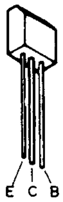
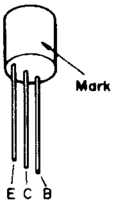
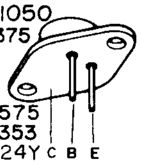
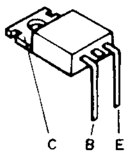
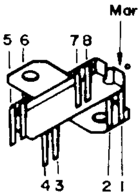
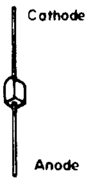
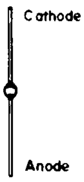
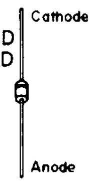
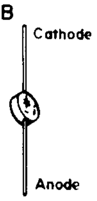
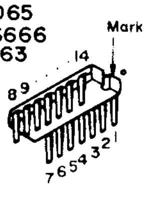
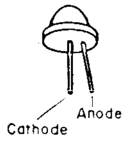
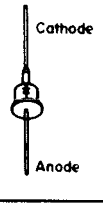
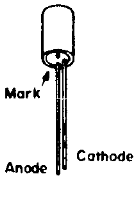
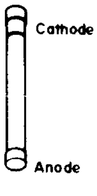
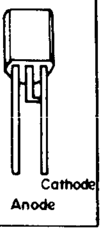

C701
Q101
Q112
Q111
FUSE
R807
P17
Q102
Q105
FUSE
Q106
Q107
Q110
T102
T103
Q904
Q905
Q903
Q902
Q901
Q103
Q001
VR001
D106
K4
Q113
Q104
Q109
J4
Q108
J5
R805
R806
L103

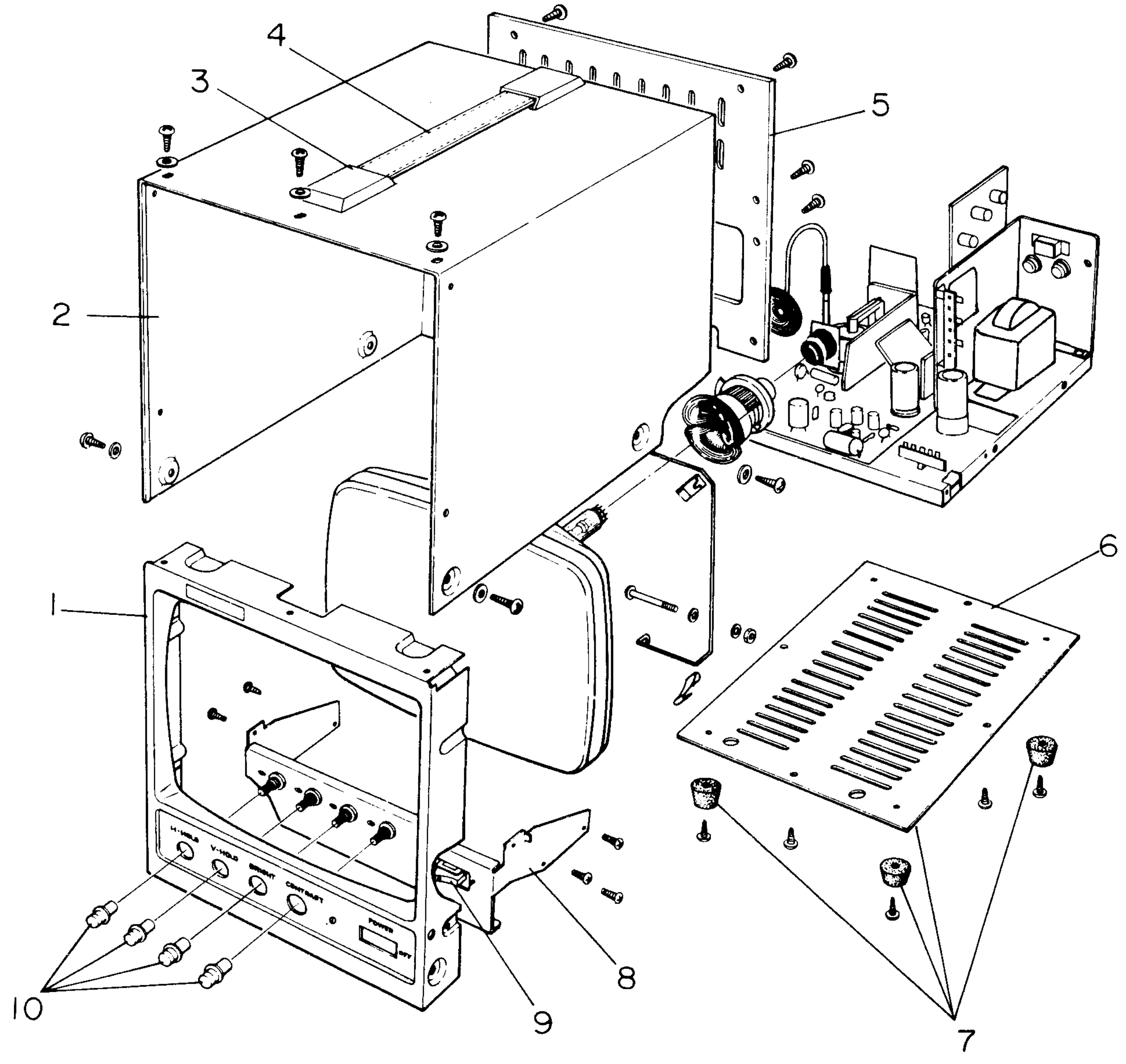
Fig. 3

TERMINAL VIEW

TO-1 2SA201 2SB187 2SD30 	2SA495 	TO-92 2SD438 2SA733 2SC536 2SC1293 2SA608 2SA643 2SA659 2SD400 2SC1175 2SC945 	2SC2057 	TO-220AB 2SC1507 2SC1520 2SC1755 2SC1756 2SD386 2SB511 2SD313 2SD325 
2SC983 	RE-3 	TO-3 & 66 DG-130 2SC1295 2SC1025 2SC1046 2SB474 2SC1050 2SB375 2SD575 2SD353 2SD24Y 2SB407 	TO-220AA 2SD331 	LA4030P  Mark 5 6 7 8 4 3 2 1
HFSD-1C/HF-1C  Cathode Anode	1JZ61 1R5TH61 ERC27-13  Cathode Anode	1S188 VZ-074 1S2076 BZ-110 ERB24-04D ERB24-06D WZ-075 1S1834 S1B01-02 1S1005 WZ-110 1S1005  Cathode Anode	ERB24-04B ERB24-06B  Cathode Anode	LA1365 CA3065 SN76666 LA1363  Mark 8 9 14 7 6 5 4 3 2 1
TLR104  Anode Cathode	DS-113  Cathode Anode	 Mark Anode Cathode	EDMF-20B EDMF-25B EDMF-15B RF03E14  Cathode Anode	 Cathode Anode

E: **Emitter** C: **Collector** B: **Base** S: **Shield**

REPLACEMENT PARTS LIST



4
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9
8
7
H-HOLD
V-HOLD
BRIGHT
CONTRAST
POWER
OFF

Key No.	Parts No.	Description	Q'ty
1	111 0 1211 07977	ESC ASSY-MAF-H	1
2	111 2 1111 11770	CABINET-MAF	1
3	111 2 3340 10271	HANDLE MTG BASE-ZL	2
4	111 0 1711 05870	HANDLE ASSY-VJY	1
5	111 2 1171 17570	BACK COVER-MAF	1
6	111 2 1181 11870	BOTTOM COVER-MAF	1
7	111 2 1731 10970	FEET-MAD	4
8	111 2 3551 19270	VR MTG BRKT-MAF	1
9	4 2311 05272	SEESAW SWITCH	1
10	111 0 1641 09770	KNOB ASSY-TAP-C	4

PARTS LIST

Schematic Location	Parts No.	Description	Q'ty
	CHASSIS PARTS		
	1112169110370	H HOLD SHAFT-ZL	1
	1112312115170	CHASSIS FRAME-MAF	1
	1112332113370	SUB PB MTG BRKT-MAF	1
	1112355119270	VR MTG BRKT-MAF	1
	1112361112870	C HOLDER-TCH	1
	1112399110580	SHAFT LOCK-SJ	1
	1112621113271	HOR RAD PLATE-TCD-B	1
	1112621113370	VERT RAD PLATE-TCD	1
	1112621116270	RADIATOR PLATE-MAF	1
	1112622010100	CONNECTING TIP-HW	3
	1112622111070	CONNECTING TIP-ZT.SR	1
	1112721113070	WIRE HOLDER-VKM	1
	1112721113270	WIRE BAND-TCM	1
	1112722110670	RUBBER BUSH-TFB	1
	PACKING MATERIALS		
	1116142148673	IND CORR CASE-MAF-G	1
	1116251117670	IND POLYE COVER-MAF	1
	1116311135970	TOP INNER CUSHION-MAF	1
	1116311136070	BOTTOM INNER CUSHION-MAF	1
	ACCESSORIES & LABELS		
	1116270189670	ENV FOR PM-MAF-J	1
	1116271105870	ENVELOPE-SR-C	1
	1116421119966	SCHEMATIC DIAG-MAC-E	1
	1116411185370	INST MANUAL-MAF-J	1
	1112291118170	KNOB HOLE COVER-MAF	4
	1116455116970	SERIAL NO LABEL	1
	1116476117380	SPEC LABEL-MAF-P	1
	SCREW CABINET		
	1013110401003	SNB , 4.0X 10,Z1	2
	1013110405401	SNB , 4.0X 60,Z1	1
	1023160401201	STT 1, 4.0X 12,Z1	5
	1023220401202	SBT , 4.0X 12,Z1	4
	1043110400014	SRN 1,4.0,	1
	1053120400004	SBW , 4.0,RB	2
	1113110401014	SBW , 4.0X10.0X08Z1	2
	1023160401206	STT 1, 4.0X 12,C2	7
	1023220300802	SBT , 3.0X 8,Z1	8
	SCREW CHASSIS		
	1013110300603	SNB , 3.0X 6,Z1	2
	1013110301201	SNB , 3.0X 12,Z1	4
	1013110400803	SNB , 4.0X 8,Z1	2
	1023220300601	SBT , 3.0X 6,Z1	1
	1023220301602	SBT , 3.0X 16,Z1	2
	1023220350801	SBT , 3.5X 8,Z1	2
	1043110200002	BRN 1, 2.0,	2
	1043110300005	ZRN 1, 3.0,	4
	1053120300004	SBW , 3.0,RB	4
	1053120400004	SBW , 4.0,RB	2
	1113110300803	SBW , 3.0X 8.0X05Z1	2
	1023220300802	SBT , 3.0X 8,Z1	41
	1053150300002	KSOWA, 3.0,Z1	7
	ELECTRICAL PARTS		
	1110901108871	GROUNDING CONNECTOR	1
L001	4272102201	PEAKING COIL 220	1
L101	4272101201	PEAKING COIL 120	1
L102	4276144370	DEFLECTION YOKE	1
L102	4276144373	DEFLECTION YOKE	1
L103	4273104971	HORIZ OSC COIL	1
L104	4253003600	HORIZ FILTER CHOKE	1
L105	4274004000	LINEARITY COIL	1
L106	4272103301	PEAKING COIL 330	1
T101	4273004500	HORIZ DRIVE TRANS	1
T102	4275146001	FLYBACK TRANS	1
T103	4251134620	POWER TRANS	1
	4226134970	PC BOARD-MAF	1
	4226136670	PC BOARD-MAF-B	1
	4226138870	DC CLAMP PCB-MAF	1
	4231004000	SLIDE SWITCH	1
	4231105272	SEESAW SWITCH	1
	4234106270	SPARK GAP	1
	4234106670	FUSE 1.6A 250V SEMKO	1
	4234107770	SPARK GAP	1
	4234108770	FUSE 315MA250V SEMKO	1
	4235061600	TERMINAL SOCKET	1
	4235105470	CRT SOCKET	1
	4235144870	FUSE HOLDER	1
	4235145470	FUSE HOLDER	1
	4235167270	M-CONNECTER FEMALE	2
	4235167571	ANODE CAP ASSY	1
	4236000200	4P AC PLUG	1
	4236001301	AC ADAPTOR	1
	4236004300	GT PIN	4
	4237100202	2P TERMINAL STRIP	1
	4237140011	4PR-U-G	1
	4237152211	5PDB-U-G	1
	1112529111370	WEDGE-TCD	1
	1112622011100	WIRE WRAP TERMINAL	53
	20125010001021	INSULATOR IS-3M	1
	20125010005021	INSULATOR 1S-23M	1
	20125020001011	PLYPRO 0.1MF K 630V	2
	20125020007011	BUSH-F	2
	20137000003000	LUG3X14	2
	1110913150000	AC CORD ASSY-EUR	1
R801	4222120670	V.R. 16FRN20FE-500	1
R802	4222120770	V.R. 16FRN20FB-500K	1
R803	4222124670	V.R. 16FRN20FB-100K	1
R804	4222123170	V.R. 16FRN20FB-1K	1
R805	4222118570	V.R. 15CFR5B-100K	1
R806	4222118270	V.R. 15CFR5B-5K	1
R807	4222107570	V.R. 10L2FRB-3K	1
VR001	4222125570	10FFRB-1M	1
C001	C1ERF-225A--	ELECT 2.2M 25V	1
C002	C2DQRM473A--	POLYPR 0.047M 200V	1
C003	C2FRF-335A--	ELECT 3.3M 315V	1
C004	C2GQRM224A--	POLYPR 0.22M 400V	1
C005	C2HYFP103Z--	CERAMIC 0.01M Z 500V	1
C203	C1CRF-227A--	ELECT 220M 16V	1
C204	C2CRF-475A--	ELECT 4.7M 160V	1
C205	C2DQRM394A--	POLYPR 0.39M 200V	1
C401	C1HRF-105A--	ELECT 1M 50V	1
C402	C1HFRM223A--	MYLAR 0.022M 50V	1
C501	C1HFRK182A--	MYLAR 0.0018M 50V	1
C502	C1HFRK154A--	MYLAR 0.15M 50V	1
C503	C1HFRM473A--	MYLAR 0.047M 50V	1
C504	C1ATDM685A--	TANTAL 6.8M 10V	1
C504	C1AUEM685A--	ELECT 6.8M 10V	1
C505	C1CRF-226A--	ELECT 22M 16V	1
C506	C1ATDM685A--	TANTAL 6.8M 10V	1
C506	C1AUEM685A--	ELECT 6.8M 10V	1
C507	C0JRF-107A--	ELECT 100M 6.3V	1
C508	C1ARF-228A--	ELECT 2200M 10V	1
C509	C1HFRM104A--	MYLAR 0.1M 50V	1
C601	C1CRF-475A--	ELECT 4.7M 16V	1
C602	C1HYFK331W--	CERAMIC 330P W 50V	1
C603	C1HFRM472A--	MYLAR 0.0047M 50V	1
C604	C1HFRM472A--	MYLAR 0.0047M 50V	1
C605	C1HFRM473A--	MYLAR 0.047M 50V	1
C606	C1CRF-475A--	ELECT 4.7M 16V	1
C607	C1HYDM223C--	CERAMIC 0.022M C 50V	1
C608	C1CRF-227A--	ELECT 220M 16V	1
C609	C1HFRJ153A--	MYLAR 0.015M 50V	1
C610	C1HFRJ823A--	MYLAR 0.082M 50V	1

NOTES:
1. Parts orders must contain Model Number, Parts Number and Description.
2. Ordering quantity of resistors must be multiple of 10 pcs.
3. Use either one of parts when more than one parts are given in the item marked with the same Schematic Location.

PARTS LIST

Schematic Location	Parts No.	Description	Q'ty
C611	C1HFRM563A--	MYLAR 0.056M 50V	1
C612	C1HFRM473A--	MYLAR 0.047M 50V	1
C613	C2HYFK102W--	CERAMIC 1000P W 500V	1
C614	C1HFRM104A--	MYLAR 0.1M 50V	1
C615	C1ERF-477A--	ELECT 470M 25V	1
C616	C2JPTK104C--	OIL 0.1M 630V	1
C617	C2JPTK473C--	OIL 0.047M 630V	1
C618	C2JPTK333C--	OIL 0.033M 630V	1
C619	C1EAFM005T--	ELECT 6.8M 25V	1
C620	C2JPTM103C--	OIL 0.01M 630V	1
C701	C1VEL-022T--	ELECT BLOCK	1
C702	C1CRF-228A--	ELECT 2200M 16V	1
C703	C1CRF-476A--	ELECT 47M 16V	1
C704	C1HYDP103Z--	CERAMIC 10000P Z 50V	1
C705	C1HYDP103Z--	CERAMIC 10000P Z 50V	1
C706	C1HYDP103Z--	CERAMIC 10000P Z 50V	1
C707	C1HYDP103Z--	CERAMIC 10000P Z 50V	1
C901	C1CRF-107A--	ELECT 100M 16V	1
C902	C1HCFK101SL-	CERAMIC 100P SL 50V	1
C903	C1CRF-107A--	ELECT 100M 16V	1
C904	C1CRF-107A--	ELECT 100M 16V	1
C905	C1CRF-107A--	ELECT 100M 16V	1
C906	C1CRF-107A--	ELECT 100M 16V	1
C907	C1HYFK221W--	CERAMIC 220P W 50V	1
C908	C1CRF-475A--	ELECT 4.7M 16V	1
C909	C2CRF-475A--	ELECT 4.7M 160V	1
C910	C1CRF-227A--	ELECT 220M 16V	1
C911	C1HCDK470RH-	CERAMIC 47P RH 50V	1
R001	R2ESNJ184A	CARBON 180K 1/4WJ	1
R002	R2ESNJ221A	CARBON 220 1/4WJ	1
R003	R2ESNJ103A	CARBON 10K 1/4WJ	1
R004	R2ESNJ681A	CARBON 680 1/4WJ	1
R006	R2ESNJ104A	CARBON 100K 1/4WJ	1
R007	R2ESNJ125A	CARBON 1.2M 1/4WJ	1
R008	R2ESNJ153A	CARBON 15K 1/4WJ	1
R009	R2ESNJ153A	CARBON 15K 1/4WJ	1
R010	R2ESNJ682A	CARBON 6.8K 1/4WJ	1
R011	R2ESNJ152A	CARBON 1.5K 1/4WJ	1
R012	R2ESNJ223A	CARBON 22K 1/4WJ	1
R013	R2ESNJ223A	CARBON 22K 1/4WJ	1
R014	R2ESNJ152A	CARBON 1.5K 1/4WJ	1
R015	R2ESNJ104A	CARBON 100K 1/4WJ	1
R016	R2ESNJ274A	CARBON 270K 1/4WJ	1
R017	R2ESNJ821A	CARBON 820 1/4WJ	1
R018	R2HCPK564A	SOLID 560K 1/2WK	1
R019	R2ESPJ274A	CARBON 270K 1/4WJ	1
R020	R2HCPK823A	SOLID 82K 1/2W	1
R021	R2HCPK684A	SOLID 680K 1/2WK	1
R201	R2HCMJ333A	SOLID 33K 1/2WJ	1
R202	R2ESMJ222A	CARBON 2.2K 1/4WJ	1
R203	R2ESMJ820A	CARBON 82 1/4WJ	1
R204	R2ESMJ471A	CARBON 470 1/4WJ	1
R205	R3ANPK392A	CARBON 3.9K 1WK	1
R210	R2ESMJ682A	CARBON 6.8K 1/4WJ	1
R211	R2HCPJ750A	SOLID 75 1/2WJ	1
R401	R2ESMK271A	CARBON 270 1/4WK	1
R402	R2ESMJ152A	CARBON 1.5K 1/4WJ	1
R403	R2ESMK273A	CARBON 27K 1/4WK	1
R404	R2ESMK824A	CARBON 820K 1/4WK	1
R405	R2ESMK822A	CARBON 8.2K 1/4WK	1
R501	R2ESMK683A	CARBON 68K 1/4WK	1
R502	R2ESMK222A	CARBON 2.2K 1/4WK	1
R503	R2ESMK183A	CARBON 18K 1/4WK	1
R504	R3APPJ0R6A	OXIDE-M 0.6 1WJ	1
R505	R2ESMK183A	CARBON 18K 1/4WK	1
R506	R2ESMK273A	CARBON 27K 1/4WK	1
R507	R2ESMK823A	CARBON 82K 1/4WK	1
R508	R2ESMK272A	CARBON 2.7K 1/4WK	1
R509	R2ESMJ184A	CARBON 180K 1/4WJ	1
R510	R2ESMJ473A	CARBON 47K 1/4WJ	1
R511	R2ESMJ472A	CARBON 4.7K 1/4WJ	1
R512	R2ESMK472A	CARBON 4.7K 1/4WK	1
R513	R2ESMJ151A	CARBON 150 1/4WJ	1
R514	R2ESMJ331A	CARBON 330 1/4WJ	1
R515	R2ESMK390A	CARBON 39 1/4WK	1
R516	R3APPK0R6A	OXIDE-M 0.6 1WK	1
R517	R2ESMJ122A	CARBON 1.2K 1/4WJ	1
R518	R2ESPK684A	CARBON 680K 1/4WK	1
R601	R2ESMK390A	CARBON 39 1/4WK	1
R602	R2ESMK822A	CARBON 8.2K 1/4WK	1
R603	R2ESMK331A	CARBON 330 1/4WK	1
R604	R2ESMK331A	CARBON 330 1/4WK	1
R605	R2ESMJ182A	CARBON 1.8K 1/4WJ	1
R606	R2ESMK682A	CARBON 6.8K 1/4WK	1
R607	R2ESMK562A	CARBON 5.6K 1/4WK	1
R608	R2ESMK562A	CARBON 5.6K 1/4WK	1
R609	R2ESMJ562A	CARBON 5.6K 1/4WJ	1
R610	R2ESMJ332A	CARBON 3.3K 1/4WJ	1
R611	R2ESMK473A	CARBON 47K 1/4WK	1
R612	R2ESMK561A	CARBON 560 1/4WK	1
R613	R2ESMK221A	CARBON 220 1/4WK	1
R614	R2ESMK561A	CARBON 560 1/4WK	1
R615	R2ESMJ270A	CARBON 27 1/4WJ	1
R616	R2HCPK470A	SOLID 47 1/2WK	1
R617	R2ESMK560A	CARBON 56 1/4WK	1
R618	R2HCMK5R6A	SOLID 5.6 1/2WK	1
R619	R2HCMK152A	SOLID 1.5K 1/2WK	1
R620	R2HCPK470A	SOLID 47 1/2WK	1
R621	R2HCPK471A	SOLID 470 1/2WK	1
R622	R2HCMM220A	SOLID 22 1/2WM	1
R623	R2HCMM684A	SOLID 680K 1/2WM	1
R701	R2ESMK681A	CARBON 680 1/4WK	1
R702	R2ESMK122A	CARBON 1.2K 1/4WK	1
R703	R2ESMK272A	CARBON 2.7K 1/4WK	1
R704	R2ESMK330A	CARBON 33 1/4WK	1
R705	R2ESMK331A	CARBON 330 1/4WK	1
R706	R2ESMK221A	CARBON 220 1/4WK	1
R707	R2ESMK101A	CARBON 100 1/4WK	1
R708	R2ESMK101A	CARBON 100 1/4WK	1
R710	R4AWYK180A	WIRE-W 18 10WK	1
R901	R2ECNK473A	SOLID 47K 1/4WK	1
R902	R2ECNK102A	SOLID 1K 1/4WK	1
R903	R2ECNK473A	SOLID 47K 1/4WK	1
R904	R2ECNK333A	SOLID 33K 1/4WK	1
R905	R2ECNK101A	SOLID 100 1/4WK	1
R906	R2ECNK331A	SOLID 330 1/4WK	1
R907	R2ECNK471A	SOLID 470 1/4WK	1
R908	R2ECNK102A	SOLID 1K 1/4WK	1
R909	R2ECNK332A	SOLID 3.3K 1/4WK	1
R910	R2ECNK102A	SOLID 1K 1/4WK	1
R911	R2ECNK102A	SOLID 1K 1/4WK	1
R912	R2ECNK222A	SOLID 2.2K 1/4WK	1
R913	R2HCPK101A	SOLID 100 1/2WK	1
R914	R2ECNK333A	SOLID 33K 1/4WK	1
R915	R2ECNK472A	SOLID 4.7K 1/4WK	1
R916	R2ECNK122A	SOLID 1.2K 1/4WK	1
R917	R2ECNK221A	SOLID 220 1/4WK	1
R918	R2ECNK153A	SOLID 15K 1/4WK	1
R919	R2ECNK332A	SOLID 3.3K 1/4WK	1
R920	R2ECNK122A	SOLID 1.2K 1/4WK	1
R921	R2ECNK271A	SOLID 270 1/4WK	1
D001	4202114770	GE DIODE 1S1005	1
D002	4202110470	SI DIODE ERB24-06D	1
D003	4202110470	SI DIODE ERB24-06D	1
D102	4202003500	GE DIODE 1S188TV	1
D103	4202107470	SI DIODE 1S2076	1
D104	4202003500	GE DIODE 1S188TV	1
D105	4202003500	GE DIODE 1S188TV	1

NOTES:
1. Parts orders must contain Model Number, Parts Number and Description.
2. Ordering quantity of resistors must be multiple of 10 pcs.
3. Use either one of parts when more than one parts are given in the item marked with the same Schematic Location.

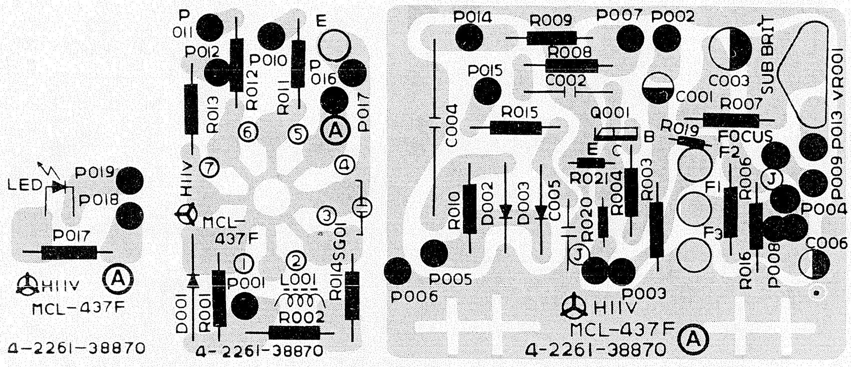
PARTS LIST

Schematic Location	Parts No.	Description	Q'ty
D106	4202108470	GE DIODE DG-130	1
D108	4202110470	SI DIODE ERB24-06D	1
D109	4202110270	SI DIODE ERB24-04D	1
D110	4202107370	SE DIODE EDMF-15B	1
D111	4202108970	ZE DIODE VZ-074	1
D112	4202110670	SI DIODE SIB01-02	1
D113	4202110670	SI DIODE SIB01-02	1
D114	4202110670	SI DIODE SIB01-02	1
D115	4202110670	SI DIODE SIB01-02	1
LED	4202111170	LED TLR104	1
Q001	TN2SC1520---3	SI TR	1
Q101	TN2SC1520---3	SI TR	1
Q102	TG2SA201--0--A	GE TR	1
Q103	TG2SC536--E--C	SI TR	1
Q104	TG2SC536--F--A	SI TR	1
Q105	TG2SD331--D2-A	SI TR	1
Q105	TG2SD331--E--A	SI TR	1
Q106	TG2SB474--2--A	GE TR	1
Q106	TG2SB474--3--A	GE TR	1
Q106	TG2SB474--4--A	GE TR	1
Q107	TG2SC536-----	SI TR	1
Q107	TN2SC945-----	SI TR	1
Q108	TG2SC536--D--B	SI TR	1
Q109	TG2SB187S---FA	GE TR	1
Q110	TG2SB375A----	GE TR	1
Q111	TG2SA608-----	SI TR	1
Q111	TG2SA659-----	SI TR	1
Q112	TG2SD30---N-FA	GE TR	1
Q112	TG2SD30---2-FA	GE TR	1
Q113	TG2SB407--0--A	GE TR	1
Q901	TG2SC536-----	SI TR	1
Q901	TN2SC945-----	SI TR	1
Q902	TG2SC536-----	SI TR	1
Q902	TN2SC945-----	SI TR	1
Q903	TG2SC536-----	SI TR	1
Q903	TN2SC945-----	SI TR	1
Q904	TG2SC536-----	SI TR	1
Q904	TN2SC945-----	SI TR	1
Q905	TG2SC536-----	SI TR	1
Q905	TN2SC945-----	SI TR	1
TH-1	4204105070	THERMISTOR SDT-0125	1
TH-2	4204104770	THERMISTOR SDT-100	1
TH-3	4204104470	THERMISTOR SDT-20	1
V101	QEM240YB4	CRT	1
V101	QNM240XB4A	CRT	1

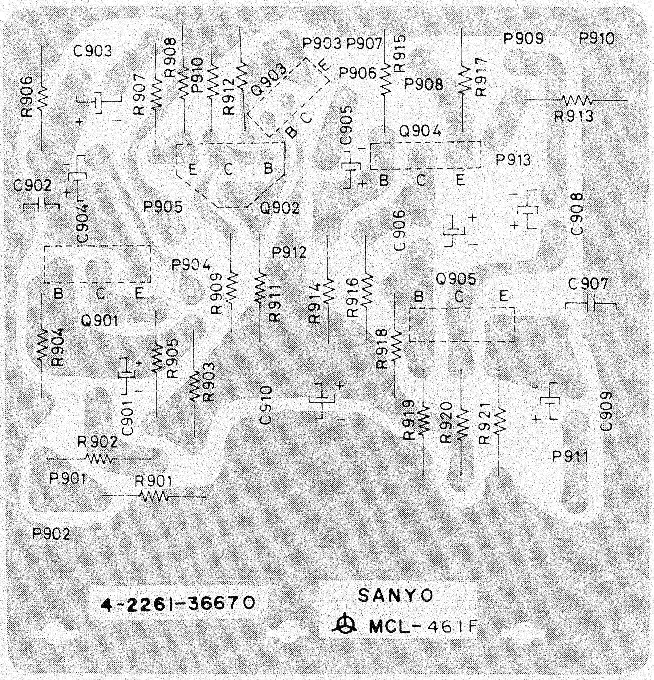
NOTES:

1. Parts orders must contain Model Number, Parts Number and Description.
2. Ordering quantity of resistors must be multiple of 10 pcs.
3. Use either one of parts when more than one parts are given in the item marked with the same Schematic Location.

CIRCUIT BOARD DIAGRAM

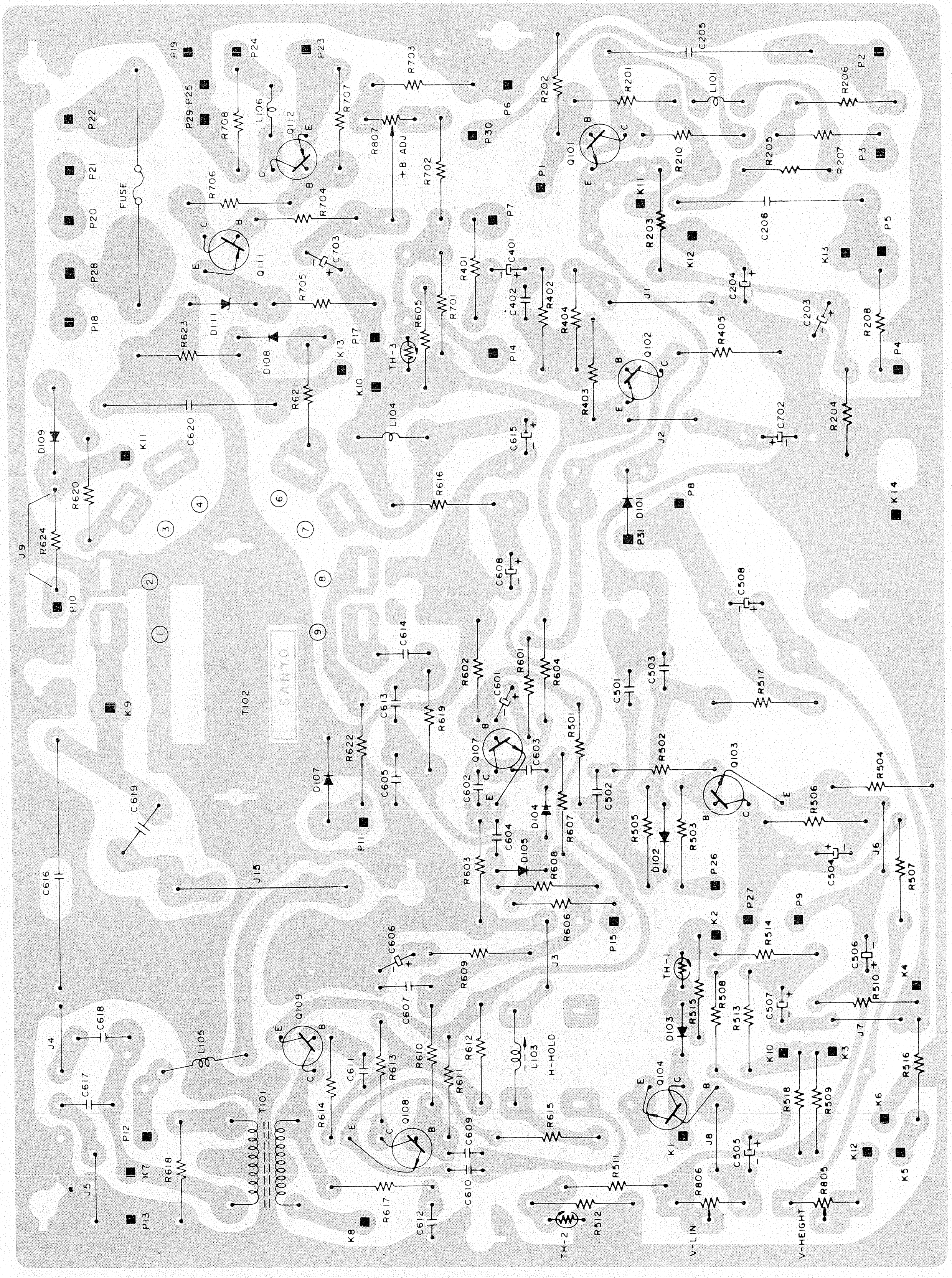

LED
P019
P018
P017
HIIV
Ⓐ
MCL-437F
4-2261-38870
P011
P012
P010
E
P016
P017
R012
R013
R011
⑥
⑤
④
⑦
③
②
①
MCL-437F
P001
L001
R002
R014
SG01
D001
R001
4-2261-38870
P014
R009
P007
P002
R008
P015
C002
C003
SUB BRIT
C001
R007
VR001
Q001
C004
R015
B
R019
FOCUS
P013
E
C
F2
P009
R021
F1
R006
P004
R010
D002
D003
C005
R020
R004
R003
F3
C006
P005
P006
P003
R016
P008
HIIV
MCL-437F
4-2261-38870
Ⓐ

DC CLAMP


C903
R906
R907
R908
P910
R912
Q903
E
B
C
P903
P907
R915
P906
P908
R917
P909
P910
R913
C905
Q904
P913
C902
E
C
B
B
C
E
C904
P905
Q902
C908
C906
P904
P912
B
C
E
Q901
R909
R911
R914
R916
Q905
B
C
E
C907
R904
R905
R903
R918
C901
C910
R919
R920
R921
C909
R902
P911
P901
R901
P902
4-2261-36670
SANYO
MCL-461F

VIDEO AMP.

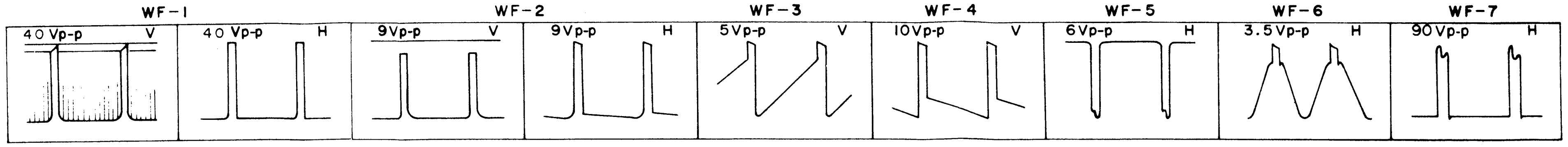
CIRCUIT BOARD DIAGRAM (MAIN)

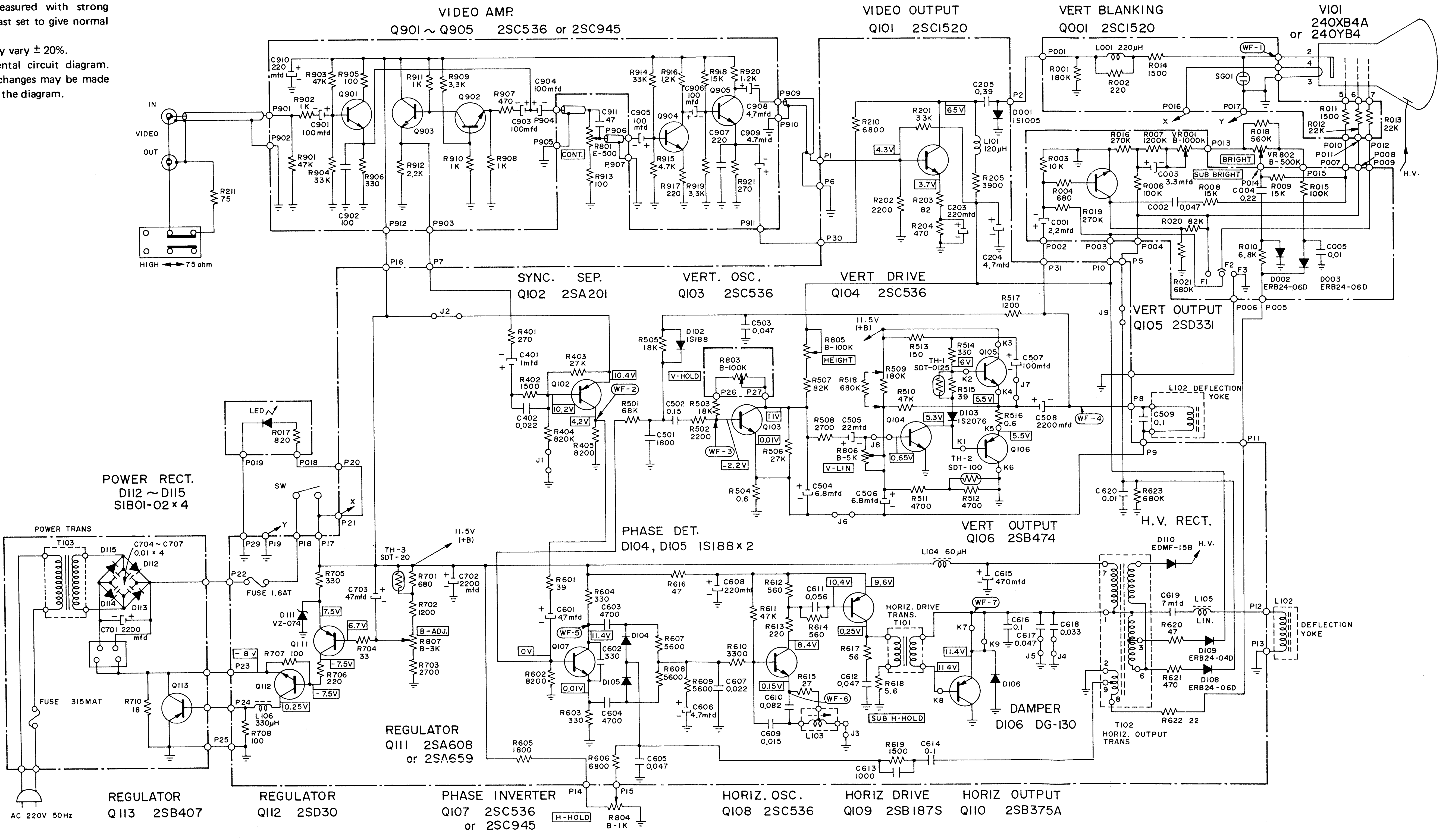

P19
P24
P23
P29 P25
P22
R708
L106
Q112
R707
R703
P6
R202
R201
C205
L101
R206
P2
P21
FUSE
R706
R704
P30
R807
+B ADJ
R702
Q101
R210
R205
R207
P3
P20
Q111
C703
P7
P1
K11
R203
C206
P5
P28
R705
R401
C401
C402
R402
K12
J1
C204
K13
P18
D111
R623
D108
P17
TH-3
R605
R701
P14
R404
R405
C203
R208
P4
Q102
R403
R621
K10
L104
C620
D109
C615
J2
C702
R204
R620
R616
D101
P8
K14
P31
J9
R624
P10
C608
C508
C614
T102
SANYO
K9
R602
R601
R604
C601
C501
C503
R517
C613
R619
R622
D107
C605
Q107
C603
R501
R502
Q103
R504
C602
D104
C502
R506
R505
R503
D102
C619
P11
C604
D105
R607
R603
R608
P26
C504
J6
R507
C616
J15
R606
P15
K2
P27
P9
C606
R609
J3
R514
TH-1
C506
R510
K4
C618
J4
Q109
C607
L105
R613
R610
R612
L103
H-HOLD
D103
R515
R508
R513
C507
J7
C611
R611
Q104
K3
R516
C617
T101
R614
Q108
R615
R518
R509
K6
P12
C609
K1
J8
C505
K5
J5
K7
R618
R511
C610
R806
R805
P13
R617
C612
K8
TH-2
R512
V-LIN
V-HEIGHT
E
B
C
+
①
②
③
④
⑥
⑦
⑧
⑨

SCHEMATIC DIAGRAM

NOTES:

1. All resistance values in ohms
   K = 1,000 M = 1,000,000
2. Unless otherwise noted in schematic, all capacitors less than 1 are expressed in mfd. and the values larger than 1 are in pF.
3. Voltage reading taken with "VTVM" from point indicated to chassis ground.
4. All waveforms measured with strong signal input, contrast set to give normal picture.
5. Voltage reading may vary ± 20%.
6. This is a fundamental circuit diagram. Some production changes may be made without revision of the diagram.




VIDEO AMP.
Q901 ~ Q905 2SC536 or 2SC945
VIDEO OUTPUT
Q101 2SC1520
VERT BLANKING
Q001 2SC1520
V101
240XB4A
or 240YB4
IN
VIDEO
OUT
HIGH 75 ohm
R211 75
CONT.
BRIGHT
SUB BRIGHT
H.V.
SYNC. SEP.
Q102 2SA201
VERT. OSC.
Q103 2SC536
VERT DRIVE
Q104 2SC536
VERT OUTPUT
Q105 2SD331
VERT OUTPUT
Q106 2SB474
V-HOLD
HEIGHT
V-LIN
L102 DEFLECTION YOKE
H.V. RECT.
D110 EDMF-15B
LED
R017 820
SW
POWER RECT.
D112 ~ D115
SIB01-02 × 4
POWER TRANS
T103
C704 ~ C707 0.01 × 4
C701 2200 mfd
FUSE 1.6AT
FUSE 315MAT
AC 220V 50Hz
TH-3 SDT-20
11.5V (+B)
B-ADJ.
PHASE DET.
D104, D105 1S188 × 2
HORIZ. DRIVE TRANS. T101
SUB H-HOLD
DAMPER
D106 DG-130
T102 HORIZ. OUTPUT TRANS
L102 DEFLECTION YOKE
REGULATOR
Q111 2SA608
or 2SA659
REGULATOR
Q113 2SB407
REGULATOR
Q112 2SD30
PHASE INVERTER
Q107 2SC536
or 2SC945
H-HOLD
R804 B-1K
HORIZ. OSC.
Q108 2SC536
HORIZ DRIVE
Q109 2SB187S
HORIZ OUTPUT
Q110 2SB375A